ENVIRONMENTAL ASSESSMENT

OF THE

OPERATION AND MAINTENANCE

OF

CONANT BROOK DAM

CONANT BROOK

MONSON, MASSACHUSETTS

Prepared by

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Preface

The purpose of this Environmental Assessment is to provide the basis for the evaluation of the environmental impact of the project due to the routine operation and maintenance of this flood control reservoir. Conant Brook Dam is self-operating and was constructed to prevent or reduce downstream flooding. Maintenance and management of the project, including the recreational facilities, during non-flood periods is also of primary importance. Enhancement of the fish and wildlife resources as well as protection of the environment within and around the reservoir area has been given careful consideration.

CONANT BROOK DAM

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I. PROJECT DESCRIPTION

A. INTRODUCTION

1. Location and Authorization

Conant Brook Dam is located on Conant Brook, a tributary of Chicopee Brook which in turn is a tributary of the Quaboag River in south central Massachusetts on the easterly side of the Connecticut River Basin. The project lies entirely within the Town of Monson, Hampden County, Massachusetts about 1-½ miles southeast of the center of town.

The dam was authorized by the Flood Control Act of 1960 (House Document 434, 86th Congress, Second Session). This Act also authorized local flood protection projects at Chicopee Falls and Three Rivers. All of these projects are in the Chicopee River watershed, the largest tributary watershed in the Connecticut River Basin.

Construction of Conant Brook Dam and appurtenant facilities was initiated in 1964 and completed in September, 1966 at a cost of $2,947,000.

2. Purpose

Conant Brook Dam functions primarily to provide flood protection for the Town of Monson and for other communities downstream along the Quaboag River.

B. STRUCTURES AND RESERVOIR

1. Dam

Conant Brook Dam consists of a 1,050 foot long rolled-earth filled dam with rock slope protection and has a maximum height of 85 feet above

the river bed. The crest of the dam is at elevation 771 feet m.s.l. (mean sea level - USGS datum). The dam is 20 feet wide at the crest and accommodates an access road to the spillway.

2. Dike

Approximately 900 feet of earth-filled dike was required to relocated Munn Road in the western part of the project. The top of the dike is at elevation 771 feet, m.s.l. It is 20 feet wide at the top with a maximum height of approximately 20 feet.

3. Spillway

The spillway, located at the west end of the dam, is a chute with a 100 foot wide ogee concrete weir. The weir elevation is 757 feet m.s.l., 14 feet below the crest of the dam.

4. Control Works

The outlet for the dam is located in the base of the structure and consists of an ungated concrete conduit 3 feet in diameter and 405 feet in length. The inlet structure at invert elevation 693 feet m.s.l. is also ungated. At full pool, the capacity of the control works is 225 c.f.s. (cubic feet per second). Flow is directed to the inlet structure by a 10 foot wide inlet channel which has an invert elevation of 693 feet m.s.l. A trash rack and log boom protect the inlet structure from clogging debris.

5. Reservoir

Although the project was designed to have no permanent pool there is a shallow pool behind the dam approximately two feet deep and covers several acres.

The reservoir at spillway crest elevation 757 feet m.s.l. has a gross storage capacity of 3,740 acre-feet, equivalent to 9.0 inches of runoff from the tributary drainage area of 7.8 square miles. At this elevation, 158 acres of reservoir lands along Conant and Vinica Brooks would be inundated.

6. Real Estate

The project totals 469 acres, all of which are owned by the government in fee, although approximately 85.5 acres are leased out for grazing purposes. There are 2 acres in easement for the project's formal access road, but no flowage easements. A gas pipe line crosses the project subject to an easement existing prior to government ownership.

7. Access Roads

There are four major access roads into the project area (East Hill Road from the north, Wales Road from the south, Stanton Road from the east and Wales Road from the west). Formal access to the project is from Wales Road which is maintained on a seasonal basis. The other access roads, which at one time passed through the project area, are now only used to provide informal access. Another casual access road is found in the northern portion of the project area near the dike on Munn Road. This access road has been made by four-wheel drive vehicles.

C. OPERATION PROCEDURES

Conant Brook Dam is self-operating. There are no mechanical gates which need to be adjusted during flood periods. As runoff enters the reservoir at a rate greater than the discharge capacity of the control works, the pool level will rise.

The project's primary function is to reduce flood stages at Monson and its secondary function is to reduce and desynchronize flood discharges on the Chicopee River.

D. MANAGEMENT PROGRAMS

A public use plan for reservoir development has not been prepared by the Corps of Engineers for this project; however, a variety of informal recreation activities take place in the project area. These include fishing, hiking, hunting, trail bike riding, snowmobiling, camping, and sightseeing. Also, State fish and wildlife programs, primarily trout and pheasant stocking, have been in operation for a number of years. Since Conant Brook is the source of the Town of Monson's emergency water supply, its use for water contact recreation is restricted.

II. ENVIRONMENTAL SETTING

A. DESCRIPTION OF GENERAL AREA

1. Climate and Precipitation

Conant Brook is a small stream flowing into Chicopee Brook, a tributary of the Quaboag River. The latter flows into the Chicopee River which is an important tributary of the Connecticut River.

The Chicopee River basin has a modified continental climate and is generally warm to hot in the summer and moderately cold in the winter.

The Chicopee River basin is subject to four general types of storms which may be classed as extratropical continental, extratropical marine, storms of tropical origin (some of which attain hurricane magnitude), and continental thunderstorms. The rapidly moving continental or cyclonic storms that cross the basin from the west or southwest produce frequent periods of rainfall but are not extremely severe. The continental storms are apt to be more critical when they are of the stationary frontal type and may produce appreciable rainfall over a given area on several successive days. Thunderstorms which can produce critical rainfall, may be of the frontal type associated wither with continental or the local type storm.

Of the coastal storms, tropical hurricanes are an infrequent but major source of flood-producing precipitation, particularly from August through October. The storms of August, 1955 and September, 1938 were of this type and were the two most severe of record in the basin.

Average monthly temperatures in the Chicopee River basin vary widely throughout the year with a mean annual temperature of approximately 50°F. Freezing temperatures are generally experienced from the latter part of September to the early part of May.

The mean annual precipitation of the Chicopee River basin is about 44 inches, ranging from less than 40 inches in the Chicopee area to more than 50 inches at the headwaters of the Ware River. On the average, the precipitation is uniformly distributed throughout the year, but there is considerable variation in the minimum and maximum precipitation occurring in the individual months.

The average annual snowfall in the Chicopee River basin is about 50 inches, with considerably greater depths at the higher elevations. The water equivalent of snow cover generally reaches a maximum sometime in March, generally about 3 to 4 inches. During the period of record, snowmelt has been insufficient alone to produce a major flood. Nevertheless, a serious flood due to heavy rainfall combined with snowmelt runoff is a possibility almost every spring.

2. Topography

The project is located in the western part of the Worcester plateau, a region of moderate relief. In general, the region lies between 500 and 1,200 feet m.s.l. in elevation and is characterized by broad, steep-sided hills and poorly drained valleys. The topography is controlled largely by the underlying, folded and much altered crystalline bedrock modified by glacial and post-glacial erosion and deposition.

The project area is, in general, rectangular in shape with an average width of 3 miles and an average length of 2.5 miles. The topography is generally hilly with elevations varying from about 700 feet at the dam site to a maximum of 1,260 feet m.s.l. in the headwaters. The principal tributary of Conant Brook is Vinica Brook, which drains about 6.4 square miles. The relatively steep slopes of the hills and tributaries, which drain into a narrow valley with a small amount of valley storage, are conducive to rapid runoff. The main stream bed above the dam site drops about 300 feet in 5 miles.

3. Geological Features

During the waning stages of the glacial period, as the ice front retreated across the region, the land surface was altered by intermittent cycles of erosion and deposition resulting from an irregualr oscillating ice margin. The overburden materials are, therefore, commonly interlaid and variable in origin and composition, and have contacts which are often gradiential. In the flood plain and along the sides of the major valleys, the materials are present as remnants of morainal debris, kame features, eskers, outwash and lake sediments. In general, these materials occur below elevation 600 or 700 but are present locally to an elevation of over 800 feet. Above these deposits, and in the smaller valleys, the slopes are blanketed with glacial till through which the bedrock outcrops rather extensively at higher elevations.

Conant Brook enters the project area from the east and flows in a narrow valley with sharply rising wooded slopes. Immediately below the dam, the flood plain is occupied by a small emergency water supply reservoir. The south abutment of the dam is formed by a steep-sided glacial till and bedrock hill rising to a height of some 175 feet above the river. Bedrock is exposed high on the east flank of the hill but lies deeply buried in the abutment area. The floor of the valley, which is occupied by thick deposits of glacial and glacio-fluvial materials, is approximately 150 feet in width at the dam.

The dike, having an elevation 771 feet m.s.l. and located approximately one mile upstream of the dam where Munn Road crosses the valley, is situated on a low drainage divide. At this point, the valley floor is some 1,000 feet in width and is covered with large amounts of morainal

debris and glacio-fluvial materials. These materials lie along both sides of the valley and form abutments for the dike. The central portion of the valley floor in this area is occupied by a rather extensive swamp.

Bedrock in the project area consists of a much injected and altered granitiferous mica schist, characterized by rather extensive surface weathering. In general, the rock surface, which is rather irregular, dips southerly behind the base of the north abutment of the dam, and under the valley floor, then rises again behind the south abutment. Generally, the rock is typified by locally contorted highly variable, thin foliation, many of the planes of which are filled with stringers and veins of quartz and feldspar.

4. Vegetative Cover

The area lies in a region that is typified by oak, yellow poplar (tuliptree), white pine, white birch, and in the highlands, gray birch. In the valleys, the dominant growth is gray birch, white birch, pitch pine, oak and cedar. Beech, white oak, red oak, maple, and white pine trees are numerous in all parts of the area, while such trees as elm, aspen, ash, hickory and walnut are not as plentiful, but do grow in all but the higher areas. Swamps contain tamarack, soft maple, alder, ferns, ground pine and club moss. Shrubs most commonly found are sumac, ground juniper, sweetfern, steeplechase, running cinquefoil, blueberries and brier berries. The common grasses are broom sedge, poverty grass, Kentucky and Canadian bluegrass, Rhode Island bentgrass, small spear grass, wood spear grass, false redtop and foxtail.

The forest cover of the project area on the steep slopes consists of second growth hardwoods as well as such conifers as spruce, hemlock and pine. Hardwoods typically found on these slopes include red and white oak, purple beech, birch, and some sugar maple.

Birch, alder and red maple, as well as conifers may be found on the lower slopes. Also, hemlock is found on rocky areas on lower slopes. In addition, infrequently inundated vegetation on lower slope areas is likely to include dogwood, sweet gum, black gum, sassafras, and red cedar.

The project also includes a ten acre cranberry bog interspersed with white pine. This bog is located in the northern portion of the project, near the Munn Road dike, and was at one time commercially operated by a local farmer.

5. Fish and Wildlife Species Present

Conant Brook is a locally known trout stream which is stocked annually by the State of Massachusetts. In 1973, 500 brook and rainbow trout were stocked above and below the dam. The stocking program is basically "put and take" with heavy fishing pressure taking place the first three weeks of the fishing season. The project area is also stocked annually by the State with pheasant (12 pheasant in 1973).

The project area provides habitat for a variety of waterfowl including blue and green heron, mallard and wood duck and occasionally Canadian geese. Kingfishers, grouse, woodcock, titmouse, bluejays, bluebirds, pileated woodpeckers, and barn owls may also be found in the area.

Mammals native to the area include deer, skunk, woodchuck, porcupine, weasel, mink, red fox, gray fox, beaver, muskrat, white-footed deer mouse, meadow mouse, and otter. While otters have not been sighted in the project, they are indigenous. The Soil Conservation Service's list of Rare and Endangered Plant and Animal Species of Massachusetts notes the otter's status as undetermined, but may be rare or endangered in Massachusetts.

Occasionally bobcat and bear have been seen in the project area. A variety of reptiles also inhabit the project area, including various turtle species.

6. Socio-Economic Conditions

The Chicopee River basin encompasses all or part of 37 towns and 2 cities in Massachusetts. About 40 percent of the population is rural and 60 percent is urban, the latter being concentrated primarily in Chicopee and Springfield.

Industry plays a major role in the economy of the Chicopee River basin. One of every four persons is engaged in this type of employment and nearly two-thirds of the cities and towns located in the basin produce manufactured goods of some sort. The leading industries, which employ close to 60 percent of all manufacturing workers, are electronics, fabricated metals, machinery, textiles, and clothing. A major portion of the industrial activity is concentrated in the south and central sections of the basin along the Chicopee, Ware and Quaboag Rivers. The City of Chicopee alone accounts for 40 percent of the manufacturing in the basin, while Indian Orchard and East Springfield contribute another 23 percent.

Agricultural pursuits in the Chicopee River basin are extremely limited with only 20 percent of the total land area being utilized for this activity. This is mainly because (1) about 16 percent of the drainage area in the vicinity of Quabbin Reservoir (117 square miles) is owned and utilized by the Commonwealth of Massachusetts for water supply purposes; and (2) a large part of the basin is hilly with poor soil conditions.

The Chicopee River basin is not rich in mineral resources. The only commercial mineral activity in operation is granite quarrying at Monson. However, sand and gravel do occur in great quantities in the southern part of the basin. The lumber resources of the basin, although commercially unimportant at the present time, are being increased in potential by forest management. The Town of Monson is noted for its manufacturing of metals and machinery as well as plastic molding, chemical production and form printing.

Conant Brook Dam is accessible via Mass./Conn. Route 32, which runs north and south intersecting Interstate 90 in Massachusetts and Interstate 86 in Connecticut.

B. WATER USES

Conant Brook is presently used as an emergency water supply source for the Town of Monson and, therefore, water contact recreation is not allowed within the project area. The project impoundment itself, however, is not used for emergency water supplies.

III. ENVIRONMENTAL IMPACT OF THE OPERATION, MAINTENANCE AND MANAGEMENT PROGRAMS

A. OPERATION OF PROJECT FOR AUTHORIZED PURPOSES

1. Downstream Effects

a. Flooding Prevented

Historically, the Chicopee River basin has been threatened by periodic flooding. Severe damages incurred by the public and private sectors during the 1955 flood of record led to construction of a number of flood control works by the Corps of Engineers in the Chicopee and Connecticut River watersheds. The principal projects in the Chicopee River system consist of two reservoirs, Barre Falls Dam and Conant Brook Dam, and five local protection projects located in Chicopee, Chicopee Falls, Three Rivers, Ware and West Warren, Massachusetts.

The primary beneficial effect of such projects has been the high degree of flood protection to downstream communities.

Although these flood protection measures have provided significant economic benefits by reducing the possibility of severe flood damage, secondary adverse environmental effects have also been encountered. Increased encroachment of downstream flood plain areas has taken place because of the protection provided by the flood control projects, thereby increasing the possibility of greater future flood damage.

b. Fish and Wildlife

Since Conant Brook Dam is ungated, outflows are normally equal to inflows and increase during flood periods in proportion to the pool stage. Therefore, downstream fisheries productivity should not be directly affected by flood control operations.

Fish movement below Conant Brook Dam is restricted by the water supply dam which was in existence there prior to construction of the project. However, Conant Brook Dam also creates a barrier to the upstream-downstream movement of fish.

In the warmer months of the summer during low flows, the shallow impoundment causes slightly higher discharge temperatures which could affect downstream stocked trout populations. However, the effect, if any, is minimal because the shallow downstream water supply impoundment has historically produced the same effect. And, since the stocking program is primarily a "put and take" operation, it is unlikely that significant trout populations remain during the summer months.

Another factor influencing the productivity of project waters and hence downstream discharges is the existence of the borrow area south of the visitor's parking lot and access road. This area, which has been partially revegetated with sweetfern and grass, has experienced erosion. A drainage ditch, intended to protect the access road from washouts, has been constructed to intercept runoff from this borrow area and divert it to the reservoir.

c. Vegetative Cover and Timber Resources

The flood protection afforded by this project and others in the Chicopee River valley has encouraged development in flood plains downstream. The flood plain areas which remain undeveloped are likely to undergo changes in vegetative cover. Prior to the development of flood control works, such areas were subject to inundation at periodic intervals, a determining factor in the type of vegetation associations found in the flood plain zones. In the absence of periodic inundation,

the traditional upland successional pattern characteristic of hardwood forests is likely to continue, the changes being most pronounced along the brushy and open areas found along the stream banks.

d. Water Quality

A water quality data collection program has been conducted at the project by the Corps of Engineers since 1970. Data is collected at inflow, impoundment and discharge stations. Analyses are conducted to measure water and air temperature, pH, conductivity, turbidity, and dissolved oxygen. Also, additional laboratory analyses have been conducted to measure a number of biological and chemical parameters.

The critical water quality period is generally during the late summer months when stream flows are lowest, rather than in the spring when water temperature is low and flows are high. Comparison of discharge water quality with inflow water quality shows some minor influences from impoundment, such as slight temperature increases, but indicate no significant water quality problems.

The Commonwealth of Massachusetts has designated Conant Brook and its tributaries as Class "A" waters. Class "A" waters are designated for use as sources of public water supply in accordance with Chapter 111 of the Massachusetts General Laws. Streams of this classification have a character that is uniformly excellent.

However, bacteriological tests of project waters show total coliform counts ranging from 80 to 6900 per 100 milliliters, and tests for fecal coliform on two dates disclosed the presence of that organism in the amounts of 16 and 32 per 100 ml. The Commonwealth of Massachusetts

standards for Class A waters state that total coliform bacteria are not to exceed an average value of 50 per 100 ml during any monthly sampling period.

Interpretation of the total coliform tests is sometimes confused by the fact that the coliform group of organisms is found in the waste products of other warm-blooded animals besides man and also in soil, grain and certain plant life. Grazing livestock or wildlife in the project area may be the source of the occasionally high coliform counts.

Though the Town of Monson's emergency water supply is chlorinated prior to distribution, the presence of fecal coliform bacteria in the tributary waters indicates that a detailed sanitary survey may be necessary in order to ascertain and identify the extent and source of this pollution problem.

e. Recreational Use

Fishing is the primary downstream recreational use which may be affected. Upon being discharged from the project, the waters of Conant Brook are impounded immediately downstream to form a small pool of approximately 2-3 acres, the emergency water supply for Monson. A short distance downstream from this pool is a private pool formed by an adjacent land owner for recreational use. Opportunity for fishing downstream of the private pool is limited by the steep slopes bordering the stream channel.

2. Upstream Effects in Reservoir

a. Fish and Wildlife

Flood control operations will affect wildlife habitat in the areas within the annual flood pool. The extent to which habitat is

damaged or destroyed will depend upon the duration, frequency and magnitude of the floods. At spillway crest elevation, for example, 158 acres will be inundated. Annual flooding during the late spring has undoubtedly affected the breeding and/or nesting of such bottomland dependent species as cottontail rabbits, various burrowing mammals and such gallinaceous species as grouse and pheasants.

The creation of a small permanent pool behind the dam has resulted in the elimination of several acres of terrestrial wildlife habitat. As part of a larger region characterized by considerable open space and little human development, the relative importance of this acreage for wildlife programs is minimal. The significance of its loss is further reduced by the additional waterfowl habitat created by the impoundment.

b. Vegetative Cover and Timber Resources

During periods of flood flows, the Conant Brook project is a "run-of-the-river" project; that is inflows are discharged with a minimum retention period. The ungated outlet structure allows reservoir storage to recede as soon as inflows to the project recede, thereby subjecting any inundated vegetation to minimal submersion periods.

Operation of the project for flood control purposes has had negligible impacts on vegetation in the area. Most of the areas inundated or affected by average annual flood levels are marsh or open lowland areas vegetated by water-tolerant species. Vegetation at slightly higher elevations is characterized by immature hardwoods and various brushy species such as speckled alder, all of which have not been affected

by any brief inundation periods to which they may have been subjected. The upland slopes of the project covered with mature stands of mixed hardwood and coniferous species, also have not been affected by project operations.

The unrestricted access of various types of recreationists has also had effect on vegetation resources of the project. Several areas where such activities as trail bike riding occur have experienced in vegetation damage and soil erosion. Also, unauthorized camping on project lands has resulted in several fires. In April of 1973, approximately one-half acre of forest was burned. Six smaller fires at different locations within the reservoir have also occurred in the past few years, causing damage to vegetation.

c. Recreational Use

Although the primary use of the project lands is flood control, a varied resource base provides opportunities for fish and wildlife and forestry management practices. The principal activity at present is a fish and game stocking program carried out by the State of Massachusetts in cooperation with the Corps of Engineers. These management efforts could be improved by selective cutting for browse regeneration, planting of food plots, and other management measures. The planting of browse and cover vegetation on those areas despoiled by construction operations would contribute to project aesthetics and its utility for wildlife management, particularly that area south of the formal access area.

Despite the absence of sustained resource management practices, the project receives recreational use and meets diverse leisure needs. Major forms of outdoor recreational activities include hunting, fishing, trail bike riding, hiking, and snowmobiling. Although no standardized or regular visitation studies are conducted, annual attendance estimates have been made. Visitation at Conant Brook Dam in 1973 was approximately 32,000.

Hunting in the project area has increased during the past years. This is a result of sustained wildlife management practices in the adjoining Norcross Wildlife Sanctuary.

Although the volume of use described above does not approach the optimum carrying capacity of the resource, some forms of resource deterioration and abuse are evident; e.g., erosion, vandalism and littering, principally in the area of the dam and access road.

Solid waste receptacles are provided on a seasonal basis at the parking near the dam. No other public service facilities are considered to be necessary or practical.

B. CONSTRUCTION AND MAINTENANCE OF PROJECT FACILITIES

1. Recreational Facilities

Maintenance of project facilities is the responsibility of the Westville Dam project manager since there are no resident personnel at Conant Brook Dam. Recreational facilities are minimal and include only a small public parking area near the south end of the dam.

The project is, nevertheless, used regularly on a year-round basis for a variety of outdoor recreational activities. The combination of varied terrain, a put-and-take sports fishery, diverse wildlife species and ease of access makes the project an obvious attraction in an era of increased outdoor recreational demand. However, the absence of public information, enforcement of regulations, a comprehensive public use plan and a resident project manager has secondary adverse environmental effects to the extent that some conflicts of use and abuse of resources may continue.

2. Waste Disposal

Wastes generated in the area are associated primarily with recreational use of project resources. While solid waste receptacles are placed near the dam during the summer months, it appears that this measure may not be adequate and additional efforts may be required to reduce littering. To the extent that such litter detracts from the project visual qualities, the lack of waste management measures in this area can be considered an adverse impact. Since no sanitary waste facilities are available, it is possible that human wastes may be contributing to the coliform counts measured at the project.

IV. ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED AS A RESULT OF THE OPERATION AND MAINTENANCE PROGRAM

A. FISH AND WILDLIFE-DOWNSTREAM CHANGES

To the extent that the normal flow regime has been modified to limit periodic flooding, operation of the project probably affects ecological balance in downstream sections of Conant Brook. Areas exhibiting the characteristic diversity and productivity of an

annually-inundated flood plain may be reduced somewhat as a result of project operation.

Water level fluctuations during flood control operations can have a minor adverse environmental impact on certain species of birds and mammals which inhabit the area, especially those that reside in close proximity to the pool.

B. WATER QUALITY - DOWNSTREAM RELEASES

The utilization of project areas for leased grazing could have an impact on water quality. Runoff from the agricultural land passes through the project and is discharged into the emergency water supply reservoir below. This could have possible adverse effects in relation to water supply use, if the Town failed to adequately treat the water before distribution.

C. VEGETATIVE COVER - INCLUDING WILDLIFE, HABITAT AND TIMBER RESOURCES

As described herein, varying amounts of vegetated acreage will be inundated due to flood control operations. Prospects of significant losses to either timber or wildlife resources are lessened, however, by (a) established associations of water-tolerant species in regions subjected to inundation and (b) a project design which provides for a minimum flood storage retention time.

V. ALTERNATIVES TO THE OPERATION, MAINTENANCE AND MANAGEMENT PROGRAM

A. DISCONTINUANCE OF AUTHORIZED FLOOD CONTROL OPERATION

Conant Brook Dam is part of a flood control system designed to protect many of the communities along the Chicopee River from flooding.

Discontinuation of flood control operations at Conant Brook Dam would increase dependence on other flood control structures in the system, and, furthermore, would leave the Town of Monson unprotected from flood damage. Since the adverse environmental effects of project operation are not of significance, the risks of discontinuing flood control operations are not warranted.

B. LAND MANAGEMENT ALTERNATIVES

At the present time, the project is being managed primarily as a flood control facility although project lands are open to the public for a variety of uses and the State does stock trout and pheasant. Since there is no resident project manager, there is a minimum of active site management in terms of facility development, landscaping and reclamation. Certain measures, however, such as posting of rules and regulations for public use are being instituted to improve conditions in the project area.

A Master Plan for reservoir development, including appendices for Project Resource Management, Forest Management, Fire Protection, Fish and Wildlife Management and Project Safety, has not yet been prepared by the Corps of Engineers for this project. Future preparation of such a plan will be beneficial to the project since it will relate project resources to public use and thereby result in a better utilization of resources.

VI. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The relationship between short-term uses of the environment and natural productivity is a complex one. Before this relationship can be understood, however, "short-term uses" and "long-term productivity" must be defined.

For the purposes of this report, "short-term uses" are generally those activities in which man interacts with any aspect of the project or its purposes. Thus, at Conant Brook, short-term uses include the flood control operations, maintenance and public use of the project. Man's activities in downstream towns are also project-related short-term uses.

"Long-term productivity" refers to the natural resource base and its capacity to support this base. Among the natural resource units connected with the project are the flood pool, the small impoundment, the overall project site and the downstream flood plains.

The flood control operation of the project is a short-term use of the environment which is of significant benefit to other short-term uses; namely, human development activity downstream. However, it has differing effects on the maintenance and enhancement of long-term productivity.

Downstream flood plains which were annually inundated prior to the institution of flood control procedures are less subject to flooding. The productivity of these areas, while not necessarily increased or decreased, can be expected to differ from pre-control conditions. In areas where development has encroached on the flood plain as a result

of flood control, however, natural productivity has decreased.

The lack of a public use program has not enhanced productivity in the project area, and may, in fact, reduce it. Indiscriminate use of much of the site for a variety of recreational pursuits can interfere with natural processes in some areas of the project. The lack of control means that some unregulated activities inherently harmful to resource productivity can have damaging effects over a period of time.

Implementation of a future development plan for the project will provide benefits to the public and enhance resource productivity. Such a plan will provide for the revegetation of existing damaged areas to supplement wildlife food and cover sources and to reduce soil erosion. The plan will also outline measures for closer supervision of recreational activities and for the development of a trail system and specific use areas. These measures will contribute to a reduction of the conflicts between recreational uses and natural processes at the project.

VII. ANY IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH ARE INVOLVED IN THE OPERATION AND MAINTENANCE PROGRAM

A. LOSS OF NATURAL RESOURCES DUE TO PERIODIC FLOODING

Periodic inundation due to flood control operations at the start of the growing season could result in some loss of vegetation. This, in itself, is not considered an irreversible or irretrievable commitment of resources since removal of the project would re-establish natural successional patterns.

VIII. COORDINATION WITH OTHER AGENCIES

The preparation of this environmental assessment was accomplished with input from the following Federal, State and local agencies:

Soil Conservation Service, U.S. Department of Agriculture

Massachusetts Department of Natural Resources

Division of Fisheries and Game

Division of Forests and Parks

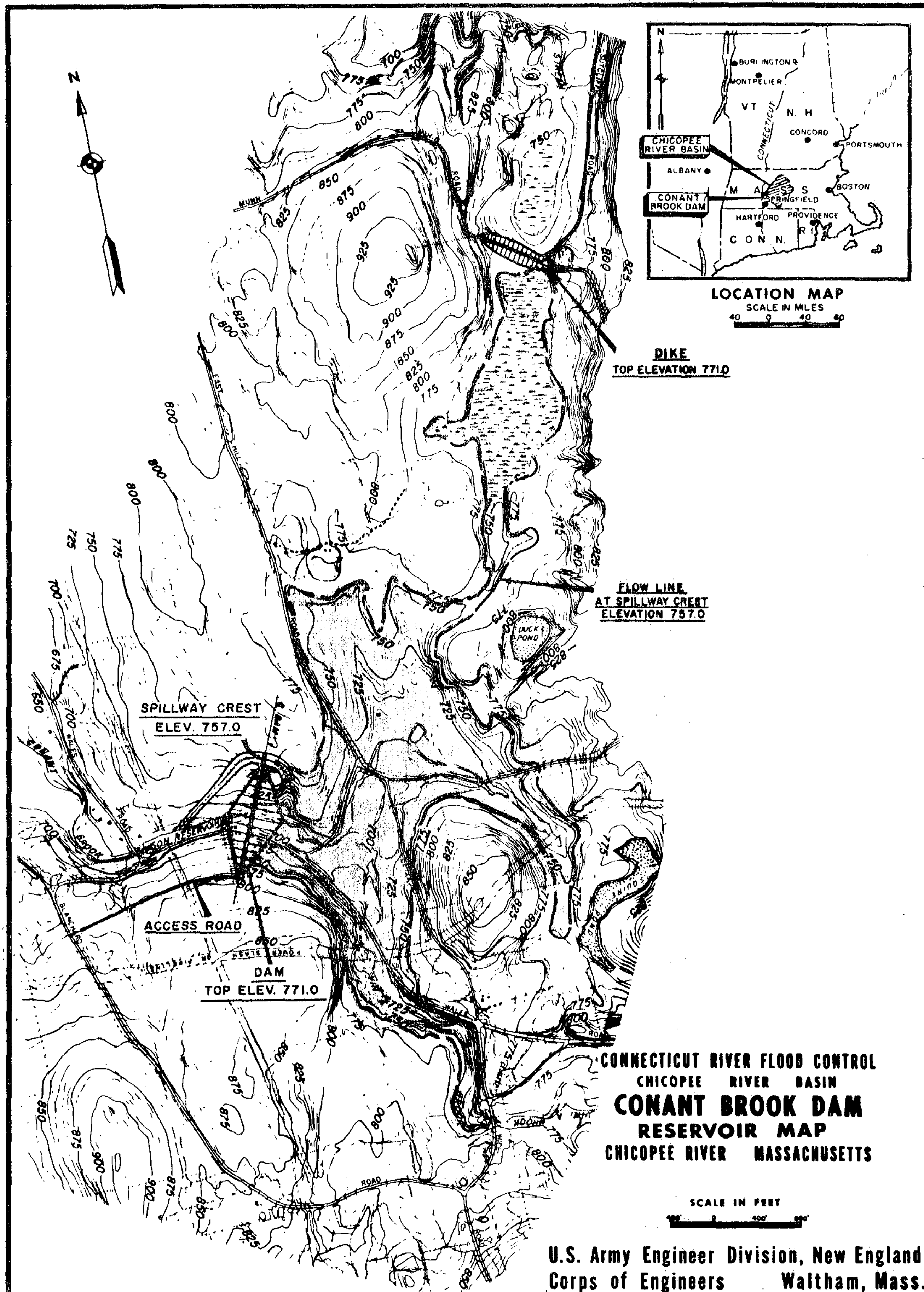
Division of Water Pollution Control

Massachusetts Department of Public Health

Lower Pioneer Valley Regional Planning Agency

Town of Monson

Norcross Wildlife Foundation, Inc.


N
BURLINGTON
MONTPELIER
VT
N. H.
CONNECTICUT
CONCORD
PORTSMOUTH
CHICOPEE RIVER BASIN
ALBANY
M A S S
BOSTON
CONANT BROOK DAM
SPRINGFIELD
HARTFORD
PROVIDENCE
CONN.
R.I.
LOCATION MAP
SCALE IN MILES
40 0 40 80
DIKE
TOP ELEVATION 771.0
FLOW LINE
AT SPILLWAY CREST
ELEVATION 757.0
DUCK POND
SPILLWAY CREST
ELEV. 757.0
ACCESS ROAD
DAM
TOP ELEV. 771.0
MUNN ROAD
EAST HILL ROAD
CONNECTICUT RIVER FLOOD CONTROL
CHICOPEE RIVER BASIN
CONANT BROOK DAM
RESERVOIR MAP
CHICOPEE RIVER MASSACHUSETTS
SCALE IN FEET
400' 0 400' 800'
U.S. Army Engineer Division, New England
Corps of Engineers Waltham, Mass.

CONCLUSIONS

Upon evaluating the material presented in this Environmental Assessment, it is my belief that continued operation, maintenance and management of the Conant Brook Dam flood control project is in the best public interest. To discontinue operation of this project could cause serious flooding downstream of the dam with significant property damage. Public recreation opportunities provided at the project would also be lost if management of the area ceased.

Environmentally, the operation, maintenance and management of Conant Brook Dam has only a minor impact. The downstream aquatic and terrestrial ecosystems have been altered somewhat due to reduced natural flooding. Impoundment of flood waters in the reservoir has minimal effects on fish reproduction, wildlife habitat and vegetation since the duration of inundation is usually rather short and often at non-critical times of year.

Therefore, since the environmental impacts of continued operation, maintenance and management of the Conant Brook Dam Flood Control Reservoir are minor, a formal environmental statement is not required under the provisions of the National Environmental Policy Act of 1969.

It is my opinion that the public will best be served by continuing operation of Conant Brook Dam.

11 August 1977
(date)

JOHN P. CHANDLER
Colonel, Corps of Engineers
Division Engineer